CHAPTER 7

RADIUS LAYOUT

Introduction

The layout of a radius point can be accomplished by a single person with a steel, fiberglass, or cloth tape. Since a cloth tape is subject to stretching or shrinking depending upon age and/or weather conditions, it is better to use a steel or fiberglass tape.

Layouts For Square Drives

The first step is to know the intersecting point of the driveway or approach, (station number). The width of the approach must also be known. First measure over from the intersecting point one half of the drive width along the edge of the mainline pavement. Mark this point A and then measure the radius distance from point A just set, also along the edge of the pavement. Mark this new point B and measure out from it perpendicularly and measure out the radius distance and set point C which is the radius point. A chaining pin should be used first to mark the point. If the radius fits when it is swung in, a hub with a nail in it can be set to mark the point. If the radius does not fit, the point can be adjusted by moving the chaining pin and rechecked before driving the hub. After the hub is set anyone can swing in the radius by hooking the end of the tape over the nail.
(See sketch, Figure 7 - 1)

Layouts For Skew Drives

Driveways and approaches on skew angles are handled as shown in Figure 7 - 3.

The Standard Sheets of the 610-DRIV and 610-PRAP series show examples of drives and approaches.
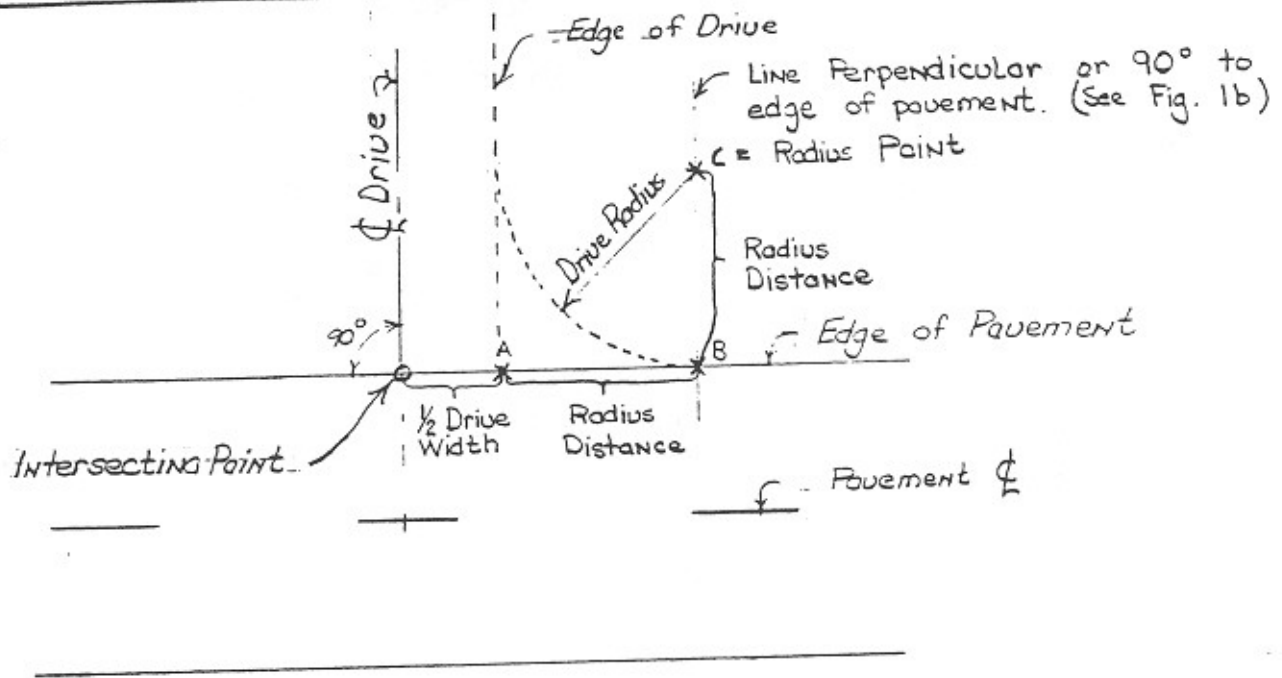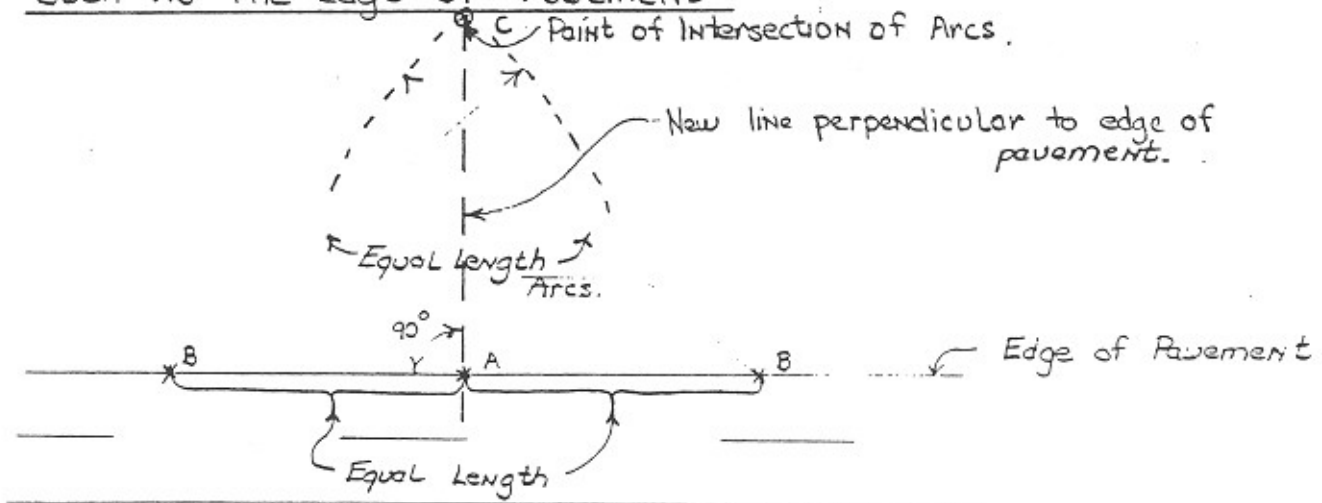
Fig. 7-1

Radius Layout For a Square Drive or Approach.

Edge of Drive

Line Perpendicular or 90° to edge of pavement. (See Fig. 1b)

C = Radius Point

¢ Drive

Drive Radius

Radius Distance

90°

Edge of Pavement

A

B

Intersecting Point

½ Drive Width

Radius Distance

Pavement ¢

Fig. 7-2

Method To Get A Line Perpendicular To Another Line Such As The Edge Of Pavement

C Point of Intersection of Arcs.

New line perpendicular to edge of pavement.

Equal length Arcs.

90°

B   Y   A   B   Edge of Pavement

Equal Length

Mark the location where the two lines will intersect as point A.
Measure equal lengths each side of point A on your existing line and
mark as points 'B'. Strike arcs from both points B using an arc
length greater than the distance between A & B. The point of
intersection of the two arcs, C, is a point on a line perpendicular
to your original line and passing through point A.

Fig. 7.3

Driveways and approaches on skew angles are handled as follows.
(Will work for a square drive also)
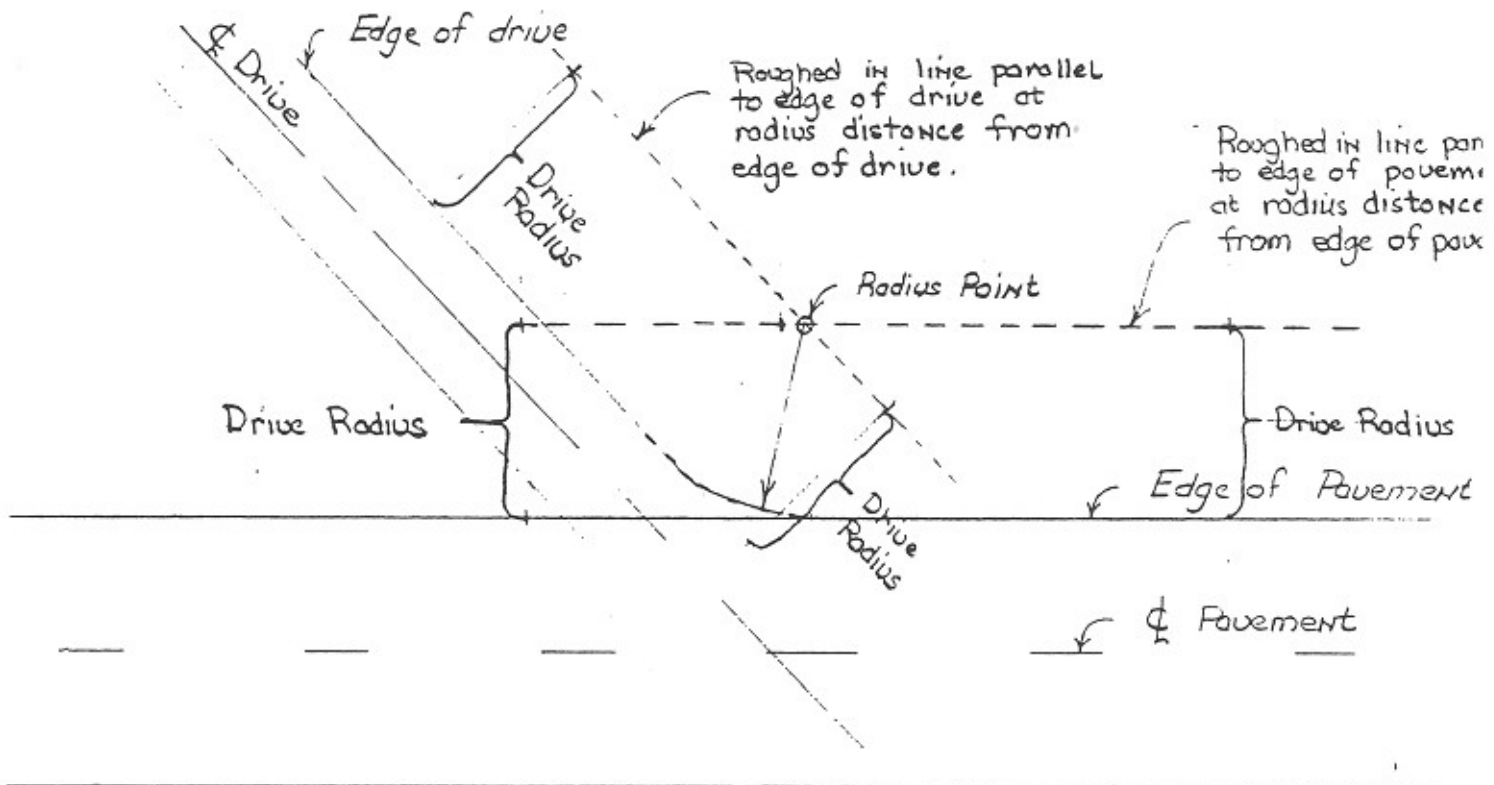
Rough in a line parallel to the edge of pavement at a distance equal to the drive radius from the edge of the pavement. (This can be done by measuring two points as shown.) Rough in a line parallel to the edge of the driveway at a distance equal to the drive radius away from the edge of the driveway. The point of intersection of the two roughed in lines is the radius point of the driveway. Check it with a chaining pin prior to driving a hub with a nail.

Radius Layout Example

A new road is being constructed in an East-West direction. A Class II Drive intersects the new pavement on the north side at Station 49+75 at a 90 degree angle. The radius is 15' on the west side and 25' on the east side. The drive width is 14'. Set the radius points.

1. Find Station 49 + 75 on the north edge of pavement.

2. Measure 7` (one half of total width of the drive) each direction from Station 49 + 75. Mark these points to use for sight lines.

3. Add radius distance to the 7' previously measured: 15'+7'= 22' from centerline of drive on west side. 25`+7'= 32' from centerline of drive on east side. Mark these points on the edge of mainline pavement.

4. Measure out radius distance on each side from edge of pavement (15' on west & 25' on east). Mark point temporarily with flag or nail.

5. Swing in radius for each side and check for line with points marked at 7' on right & left of driveway.

6. If line looks good and width checks, then set hubs for radius points.